

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY PCT

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 08 JUL 2005

WIPO

Applicant's or agent's file reference 101.0146PCT	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB2004/001084	International filing date (day/month/year) 12.03.2004	Priority date (day/month/year) 28.03.2003	
International Patent Classification (IPC) or national classification and IPC E21B47/10, E21B49/00			
Applicant SENSOR HIGHWAY LIMITED et al.			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input checked="" type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>			
Date of submission of the demand 25.09.2004		Date of completion of this report 07.07.2005	
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>		Authorized Officer Bellingacci, F Telephone No. +49 89 2399- 2384	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/001084

Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-8 as originally filed

Claims, Numbers

1-6 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/001084

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-6
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Reference is made to the following documents:

D1 = US 3 795 142 A

D2 = WO 01/75403 A

V - Reasoned statement under Rule 66.2 (a)(ii)

V-1 D1, which is considered as the closest prior art, describes a method of determining the inflow profile of an injection wellbore, comprising:

- stopping injection of fluid into a formation (step b. of claim 1 of D1), the formation intersected by a wellbore having a section uphole of the formation and a section within the formation;
- monitoring temperature at least partially along the uphole section of the wellbore and at least partially along the formation section of the wellbore (see fig. 1);
- injecting fluid into the formation once the temperature in the uphole section of the wellbore increases (claim. 1 step c.).

D1 teaches to run, after the above steps, a series of time spaced temperature logs to determine how quickly temperature increases in the different intervals of the interval.

The further step specified in claim 1 of the present application, namely to monitor the movement of the increased temperature fluid as it moves from the uphole section of the wellbore along the formation section of the wellbore, is therefore new, and claim 1 meets the novelty requirement of Art. 33(2) PCT.

The problem solved by the distinguishing feature of claim 1 is to provide a quicker method to determine the intake profile of an injection well avoiding to wait until the formation temperature is affected by the fluid being pumped into it.

D2 teaches to create in a well a slug of fluid having an altered temperature and then pumping it into the reservoir monitoring in the meantime the movement of the temperature altered fluid (col. 3, lines 25-33; fig. 18). As D1 explicitly mentions the creation a slug of fluid having an altered temperature (claim 1, steps b. and c.), the skilled man will find obvious to apply to the movement of said slug the interpretation steps taught by D2, reaching however in doing so the subject-matter of claim 1.

Claim 1 does not meet therefore the inventive step requirement of ART. 33(3)

PCT.

The features of claims 2 and 3 are also disclosed in D2 (see page 5, line 34 and respectively page 24, lines 18-27), while the steps of claims 4 to 6 are routinely performed in the interpretation of downhole logs. None of said claims meets therefore the inventive step requirements of Art. 33(3) PCT.

VII - Certain defects

- a) The independent claims are not properly cast in the two part form, with those features which in combination are part of the prior art (D1) being placed in the preamble, contrary to the requirements of Rule 6.3(b) PCT.
- b) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D1 to D3 is not mentioned in the description, nor are said documents identified therein.